

Attorney's Docket No. 42P16806

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Shih-wei Liao et al.

Application No.: 10/676,889

Filed: September 30, 2003

For: METHODS AND APPARATUSES FOR
COMPILER-CREATING HELPER
THREADS FOR MULTI-THREADING

Examiner: Not Yet Assigned

Art Unit: Not Yet Assigned

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

Enclosed is a copy of Information Disclosure Citation Form PTO-1449 or PTO/SB/08 together with copies of the documents cited on that form. It is respectfully requested that the cited documents be considered and that the enclosed copy of Information Disclosure Citation Form PTO-1449 or PTO/SB/08 be initialed by the Examiner to indicate such consideration and a copy thereof returned to applicant(s).

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on December 16, 2003.
(Date of Deposit)

Alma Goldchain

(Typed or printed name of person mailing correspondence)

Alma Goldchain
(Signature of person mailing correspondence)

Pursuant to 37 C.F.R. § 1.97, the submission of this Information Disclosure Statement is not to be construed as a representation that a search has been made and is not to be construed as an admission that the information cited in this statement is material to patentability.

Pursuant to 37 C.F.R. § 1.97, this Information Disclosure Statement is being submitted under one of the following (as indicated by an "X" to the left of the appropriate paragraph):

- X 37 C.F.R. §1.97(b).
- 37 C.F.R. §1.97(c). If so, then enclosed with this Information Disclosure Statement is one of the following:
- A statement pursuant to 37 C.F.R. §1.97(e) or
- A check for \$180.00 for the fee under 37 C.F.R. § 1.17(p).
- 37 C.F.R. §1.97(d). If so, then enclosed with this Information Disclosure Statement are the following:
- (1) A statement pursuant to 37 C.F.R. §1.97(e); and
- (2) A check for \$180.00 for the fee under 37 C.F.R. §1.17(p) for submission of the Information Disclosure Statement.

If there are any additional charges, please charge Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Dated: 12/16, 2003


Kevin G. Shao
Reg. No. 45,095

12400 Wilshire Blvd.
Seventh Floor
Los Angeles, CA 90025
(408) 720-8300

U.S. PATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				

Examiner
Signature _____ Date Considered _____

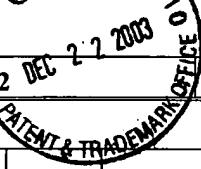
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicant's unique citation designation number (optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-766-9199) and select option 2.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)



Sheet

2 of 3

C mplete if Known

Application Number	10/676,889
Filing Date	September 30, 2003
First Named Inventor:	Shih-wei Liao et al.
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned

Attorney Docket Number 42P16806

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
		CAROLE DULONG, et al., "An Overview of the Intel® IA-64 Compiler," Intel Technology Journal Q4 1999, 15 pages, Intel Corporation	
		GLENN HINTON, et al., "The Microarchitecture of the Pentium® 4 Processor," Intel Technology Journal Q1 2001, 13 pages, Intel Corporation. Downloaded from http://developer.intel.com/ .	
		AMIR ROTH and GURINDAR S. SOHI, "Speculative Data-Driven Multithreading," appears in the Proceedings of the 7 th International Conference on High Performance Computer Architecture (HPCA-7), Jan. 22-24, 2001, 12 pages.	
		JERRY HUCK, et al., "Introducing The IA-64 Architecture," IEEE MICRO, September-October 2000, pages 12-23, IEEE, Los Alamitos, CA, USA.	
		DEBORAH T. MARR, et al., "Hyper-Threading Technology Architecture and Microarchitecture," Intel Technology Journal Q1 2002, 12 pages, Intel Corporation. Downloaded from http://developer.intel.com/ .	
		STEVE S. W. LIAO, et al., "Post-Pass Binary Adaptation for Software-Based Speculative Precomputation," PLDI'02, June 17-19, 2002, Berlin, Germany, pages 117-128.	
		JAMISON D. COLLINS, et al., "Speculative Precomputation: Long-range Prefetching of Delinquent Loads," IEEE 2001, pages 14-25.	
		DONGKEUN KIM and DONALD YEUNG, "Design and Evaluation of Compiler Algorithms for Pre-Execution," ASPLOS X, 10/02, San Jose, CA, USA, pages 159-170.	
		ROBERT S. CHAPPELL, et al., "Simultaneous Subordinate Microthreading (SSMT)," IEEE, 1999, pages 186-195.	
		HIRALAL AGRAWAL and JOSEPH R. HORGAN, "Dynamic Program Slicing," Proceedings of the ACM SIGPLAN'90 Conference on Programming Language Design and Implementation, White Plains, New York, June 20-22, 1990, pages 246-256.	
		KARTHIK SUNDARAMOORTHY, et al., "Slipstream Processors: Improving Both Performance and Fault Tolerance," A.C.M. (ASPLOS), Cambridge, MA, USA, Nov. 12-15, 2000, pages 257-268.	

Examiner Signature	Date Considered
--------------------	-----------------

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

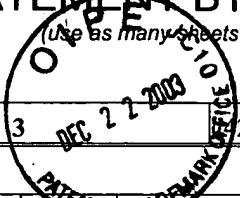
¹Applicant's unique citation designation number (optional). ²Applicant is to place a check mark here if English Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)



Sheet 3 of 2P16806 3 Attorney Docket Number 42P16806

Complete if Known

Application Number	10/676,889
Filing Date	September 30, 2003
First Named Inventor:	Shih-wei Liao et al.
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
		CRAIG ZILLES and GURINDAR SOHI, "Execution-based Prediction Using Speculative Slices," IEEE, 2001, pages 2-13.	
		JAMISON D. COLLINS, et al, "Dynamic Speculative Precomputation," IEEE 2001, pages 306-317.	
		ANDREAS MOSHOVOS, et al, "Slice-Processors: An Implementation of Operation-Based Prediction," ICS '01, Sorrento, Italy, ACM 2001, pages 321-334.	
		SHIH-WEI LAIO, et al, "SUIF Explorer: An Interactive and Interprocedural Parallelizer," PPoPP '99, 5/99, Atlanta, GA, USA. 1999 ACM, pages 37-48.	
		DEAN M. TULLSEN, et al., "Simultaneous Multithreading: Maximizing On-Chip Parallelism," ISCA '95, Santa Margherita, Ligure, Italy, 1995 ACM, pages 392-403.	
		CHI-KEUNG LUK, "Tolerating Memory Latency Through Software-Controlled Pre-Execution in Simultaneous Multithreading Processors," IEEE 2001, page 40-51.	
		RAKESH GHIYA, et al., "On the Importance of Points-To Analysis and Other Memory Disambiguation Methods for C Programs," PLDI 2001 6/01, Snowbird, Utah, USA, 2001 ACM ISBN, pages 47-58.	
		MURALI ANNAVARAM, et al., "Data Prefetching by Dependence Graph Precomputation," IEEE 2001, pages 52-61.	
		HONG WANG, et al., "Speculative Precomputation: Exploring the Use of Multithreading for Latency," Intel Technology Journal Q1 2002. Vol. 6 Issue 1, 14 pages, Intel Corporation. Downloaded from http://developer.intel.com/ .	
		XINMIN TIAN, et al., "Intel® OpenMP C++/Fortran Compiler for Hyper-Threading Technology: Implementation and Performance," Intel Technology Journal Q1 2002. Vol. 6 Issue 1, 11 pages, Intel Corporation. Downloaded from http://developer.intel.com/ .	

Examiner Signature	Date Considered
--------------------	-----------------

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Applicant's unique citation designation number (optional). ²Applicant is to place a check mark here if English Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.